Dietary change as a strategy for preventing cancer

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Abstract: The idea that dietary change can alter risk of malignant disease arose historically from animal experiments and observations of human cancer rates. Diet and cancer hypotheses correspond to one of two conceptual approaches to 'diet': 1) the decomposition approach, focusing on specific nutrients and other chemical constituents of food; and 2) the integrative approach, emphasizing the action of whole foods or food patterns (cuisines). Four types of scientific investigation are available for advancing our understanding of diet and cancer: animal experiments, human metabolic (clinical nutrition) studies, observational epidemiologic studies, and randomized, controlled trials (intervention studies). Each of these study types has its strengths and limitations. Observational epidemiologic studies and trials have the advantage of examining explicit cancer end points in humans. Positive findings from large, randomized dietary intervention studies would be particularly compelling. Results from animal and metabolic research, however, can complement findings from epidemiologic studies and trials. Considerable attention is now being paid to the joint action of dietary factors and 'susceptibility' genes. Finally, the author considers the extent to which dietary change can be considered a realistic strategy for preventing major cancers - those of the lung, breast, prostate, and colorectum.